

## CLAIMS

What is Claimed is:

5      **Functionally Claimed Polymer:**

1.      A composition comprising a triggerable cationic polymer,  
wherein the polymer formulation is triggerable. *claim 1, 9*

2.      A composition comprising a triggerable cationic polymer,  
10      wherein the polymer formulation is insoluble in a neutral salt solution  
containing greater than about 2 weight percent mono or multivalent ions and is  
dispersible in water containing up to about 500 ppm of one or more  
multivalent ions.

15      3.      A composition comprising a triggerable cationic polymer,  
wherein the polymer formulation is insoluble in a neutral salt solution  
containing at least about 2 weight percent salt, said salt comprising one or  
more monovalent ions; and wherein the polymer formulation is soluble in  
water containing up to about 500 ppm of one or more multivalent ions.

20      4.      A composition comprising a triggerable cationic polymer,  
wherein the polymer formulation has wet strength in a neutral salt solution  
containing at least about 2 weight percent salt, said salt comprising one or  
more monovalent ions; and wherein the polymer formulation is dispersible in  
25      hard or soft water.

5.      A composition comprising a triggerable cationic polymer,  
wherein the polymer formulation is insoluble in water that does not contain a  
sufficient amount of a first triggering agent; and wherein the polymer  
30      formulation is soluble in water containing a triggering amount or less of a  
second triggering agent.

6. A binder composition for binding fibrous material into an integral web, said binder composition comprising the composition of Claim 1.

9 of 261

7. A nonwoven fabric comprising fibrous material and a binder material, said binder material comprising the composition of Claim 1.

8. A fibrous substrate comprising:  
fibrous material; and  
a binder composition for binding said fibrous material into an integral web, said binder composition comprising a triggerable cationic polymer.

9. A water-dispersible article comprising the fibrous substrate of Claim 8.

10. A wet wipe comprising:  
a fibrous material;  
a binder composition for binding said fibrous material into an integral web, said binder composition comprising a triggerable cationic polymer; and  
said fibrous material being wetted by a wetting solution containing at least about 2 weight percent salt, said salt comprising one or more monovalent ions.

11. A method of making a wet wipe comprising:  
forming a substrate of fibrous material;  
applying to said substrate a binder composition for said fibrous material comprising a triggerable cationic polymer; and  
applying to said substrate a wetting solution containing at least about 2 weight percent salt, said salt comprising one or more monovalent ions.

12. A method comprising:  
applying to a substrate of fibrous material;

a binder composition for said fibrous material comprising a triggerable cationic polymer.

**First Quaternary Polymer:**

5           13.    A polymer comprising a quaternary polymer of acrylic acid, butyl acrylate, 2-ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride.

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10           14.    The polymer of Claim 13, wherein said acrylic acid comprises approximately \_\_ to \_\_ weight percent, said butyl acrylate comprises approximately \_\_ to \_\_ weight percent, said 2-ethylhexyl acrylate comprises approximately \_\_ to \_\_ weight percent and said [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride comprises approximately \_\_ to \_\_ weight  
15 percent of said quaternary polymer.

15           15.    A binder composition for binding fibrous material into an integral web, said binder composition comprising the polymer of Claim 13.

20           16.    A nonwoven fabric comprising fibrous material and a binder material, said binder material comprising the polymer of Claim 13.

17.    A fibrous substrate comprising:

fibrous material; and

25           a binder composition for binding said fibrous material into an integral web, said binder composition comprising a quaternary polymer of acrylic acid, butyl acrylate, 2-ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride.

30           18.    A water-dispersible article comprising the fibrous substrate of Claim 17.

19. A wet wipe comprising:

a fibrous material;

5 a binder composition for binding said fibrous material into an integral web, said binder composition comprising a quaternary polymer of acrylic acid, butyl acrylate, 2-ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride; and

10 said fibrous material being wetted by a wetting solution containing at least about 2 weight percent salt, said salt comprising one or more monovalent ions.

20. A method of making a wet wipe comprising:  
forming a substrate of fibrous material;  
applying to said substrate a binder composition for said fibrous  
material comprising a quaternary polymer of acrylic acid, butyl acrylate, 2-  
ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl ammonium  
chloride; and

applying to said substrate a wetting solution containing at least  
about 2 weight percent salt, said salt comprising one or more monovalent ions.

21. A method comprising:  
applying to a substrate of fibrous material;  
a binder composition for said fibrous material comprising a quaternary  
polymer of acrylic acid, butyl acrylate, 2-ethylhexyl acrylate and [2-  
(methacryloyloxy)ethyl] trimethyl ammonium chloride.

#### **Second Quaternary Polymer:**

22. A polymer comprising a quaternary polymer of acrylamide,  
butyl acrylate, 2-ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl  
ammonium chloride.

23. The polymer of Claim 22, wherein said acrylamide comprises  
approximately \_\_ to \_\_ weight percent, said butyl acrylate comprises  
approximately \_\_ to \_\_ weight percent, said 2-ethylhexyl acrylate comprises  
approximately \_\_ to \_\_ weight percent and said [2-(methacryloyloxy)ethyl]  
trimethyl ammonium chloride comprises approximately \_\_ to \_\_ weight  
percent of said quaternary polymer.

24. A binder composition for binding fibrous material into an  
integral web, said binder composition comprising the polymer of Claim 22.

25. A nonwoven fabric comprising fibrous material and a binder material, said binder material comprising the polymer of Claim 22.

26. A fibrous substrate comprising:

fibrous material; and

a binder composition for binding said fibrous material into an integral web, said binder composition comprising a quaternary polymer of acrylamide, butyl acrylate, 2-ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride.

27. A water-dispersible article comprising the fibrous substrate of Claim 26.

28. A wet wipe comprising:

a fibrous material;

a binder composition for binding said fibrous material into an integral web, said binder composition comprising a quaternary polymer of acrylamide, butyl acrylate, 2-ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride; and

said fibrous material being wetted by a wetting solution containing at least about 2 weight percent salt, said salt comprising one or more monovalent ions.

29. A method of making a wet wipe comprising:

forming a substrate of fibrous material;

applying to said substrate a binder composition for said fibrous material comprising a quaternary polymer of acrylamide, butyl acrylate, 2-ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride; and

applying to said substrate a wetting solution containing at least about 2 weight percent salt, said salt comprising one or more monovalent ions.

30. A method comprising:

applying to a substrate of fibrous material;

a binder composition for said fibrous material comprising a quaternary polymer of acrylamide, butyl acrylate, 2-ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride.

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**Terpolymer:**

31. A polymer comprising a terpolymer of butyl acrylate, 2-ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride.

32. The polymer of Claim 10, wherein said butyl acrylate comprises approximately \_\_ to \_\_ weight percent, said 2-ethylhexyl acrylate comprises approximately \_\_ to \_\_ weight percent and said [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride comprises approximately \_\_ to \_\_ weight percent of said terpolymer.

33. A binder composition for binding fibrous material into an integral web, said binder composition comprising the polymer of Claim 31.

34. A nonwoven fabric comprising fibrous material and a binder material, said binder material comprising the polymer of Claim 31.

35. A fibrous substrate comprising:  
fibrous material; and

a binder composition for binding said fibrous material into an integral web, said binder composition comprising a terpolymer of butyl acrylate, 2-ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride.

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36. A water-dispersible article comprising the fibrous substrate of Claim 35.

37. A wet wipe comprising:

a fibrous material;

a binder composition for binding said fibrous material into an integral web, said binder composition comprising a terpolymer of butyl acrylate, 2-ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride; and

said fibrous material being wetted by a wetting solution containing at least about 2 weight percent salt, said salt comprising one or more monovalent ions.

38. A method of making a wet wipe comprising:

forming a substrate of fibrous material;

applying to said substrate a binder composition for said fibrous material comprising a terpolymer of butyl acrylate, 2-ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride; and

applying to said substrate a wetting solution containing at least about 2 weight percent salt, said salt comprising one or more monovalent ions.

39. A method comprising:

applying to a substrate of fibrous material;

a binder composition for said fibrous material comprising a terpolymer of butyl acrylate, 2-ethylhexyl acrylate and [2-(methacryloyloxy)ethyl] trimethyl ammonium chloride.